

02/20/2001  
Permit No.: V-1929  
FINAL

## **IMPERIAL COUNTY AIR POLLUTION CONTROL DISTRICT**

150 S. Ninth Street  
El Centro, CA 92243  
(760) 339 4606

### **MAJOR FACILITY PERMIT REVIEW**

Company Name:	Imperial Valley Resource Recovery Co., L.L.C.
Facility Name:	Primary Power # 1
SIC Code:	4911 (Electric Services)
Source Type:	Power Plant
Location:	3505 Highway 111, Imperial, CA 92251
Responsible Official:	Al Kurzenhauser
Plant Site Contact:	Manuel Perez
Issuing Engineer:	Reyes Romero

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## **I. Introduction**

Pursuant to Rule 900, of the Imperial County Air Pollution Control District Rules and Regulations, the District intends to issue a Title V Operating Permit to Imperial Valley Resource Recovery Co., L.L.C., Primary Power # 1 Facility. The Primary Power # 1 is a waste-to-energy facility utilizing a wood-fired boiler to generate electricity. The facility will operate under Title V Operating Permit number V-1929. The Operating Permit includes conditions to ensure that all Federal, State and District requirements are satisfied.

## **II. Project Description**

Imperial Valley Resource Recovery Co., L.L.C, Primary Power # 1 facility, generates electrical power from a steam turbine. The facility was issued an Authority to Construct in 1987. The boiler was manufactured by Zurn Industries, Inc. The boiler has a maximum fuel input of 291.9 MMBtu/hr (22 tons/hr wood residues; 6,633 Btu/lb).

The facility consists of a fuel storage and processing area, a Zurn Industries traveling-gate type stoker boiler with supplemental gas burner, ash handling and storage areas, a cooling tower, maintenance shop and laboratory. The wood consists of construction debris and tree trimmings. The wood is brought in bulk and unloaded in piles near the reclaimer, where a front loader hauls and pushes it into the reclaimer. Where appropriate, some fuel handling equipment contains water sprays to control dust created by the movement of the wood.

The boiler is equipped with pollution control devices for oxides of nitrogen ( $\text{NO}_x$ ), sulfur dioxide ( $\text{SO}_2$ ), and particulate matter (PM).  $\text{NO}_x$  control is achieved by a selective non-catalytic reduction method involving the injection of anhydrous ammonia into the boiler. Flue gas from the boiler passes through a lime slurry scrubber to remove  $\text{SO}_2$  and then into a baghouse where the fly ash is collected. Fuel ash comes off the bottom grate where it is wetted to reduce temperature and to control dust. The fly-ash carried by flue gas combustion is collected by a baghouse and stored in a silo and loaded into the dump truck and hauled to the nearby ground storage area.

## **III. Current Emission Status:**

Imperial Valley Resource Recovery Co., L.L.C, Primary Power # 1 facility, has submitted

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a Title V application for its electrical generating facility in Imperial, California. This facility has been determined as a major source of emissions for Nitrogen Oxides (NO<sub>x</sub>), Carbon Monoxide (CO), Sulfur Dioxide (SO<sub>2</sub>), and Hydrochloric Acid.

#### **IV. Applicable Requirement**

According to the information submitted in the Title V application and the District review, the following are the Federal, State, and District requirements that apply to the facilities.

Applicable Requirement	Enforceability	Equipment Affected
Rule 110-Stack Monitoring	Federal, District	Boiler
Rule 111-Equipment Breakdown	Federal, District	Facility Wide
Rule 117-Nuisance	Federal, District	Facility Wide
Rule 201-Permits Required	Federal, District	Facility Wide
Rule 202-Exemptions	Federal, District	Facility Wide
Rule 207-Standards for Permit to Construct	Federal, District	Boiler, Tub Grinder, Emergency Generator, Fire Pump
Rule 208-Standards for Permit to Operate	Federal, District	Boiler, Tub Grinder, Emergency Generator, Fire Pump
Rule 401-Opacity of Emissions	Federal, District	Facility Wide
Rule 403-Quantity of Emissions	Federal, District	Boiler
Rule 404-Particulate Matter Emissions	Federal, District	Boiler, Emergency Generator, Fire Pump
Rule 405-Sulfur Compounds	Federal, District	Boiler, Emergency Generator, Fire Pump

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Rule 406-Specific Contaminants	Federal, District	Boiler, Emergency Generator, Fire Pump
Rule 126-Sulfur Content of Fuels	Federal, District	Emergency Generator, Fire Pump
Rule 131-Fuel Burning Equipment	Federal, District	Boiler, Emergency Generator, Fire Pump
40 CFR Part 60, Subpart A, General Provisions	Federal, District	Boiler
40 CFR Part 60, Subpart Db, Industrial-Commercial-Institutional Steam Generating Units	Federal, District	Boiler
NSR Permit # 1929C A. Facilities Operation B. Malfunction C. Right to Entry D. Fuel Storage E. Manure, Crop Waste, and Wood Waste Processing Facility F. Traveling Grate Stoker Furnace Stack Emissions G. Dust Emissions From Ash and Limestone Silos H. Performance Tests I. Continuous Emission Monitoring J. Air Pollution Control Equipment K. Odors Associated with Fuel Handling L. Total Yearly Operations and Emissions M. Natural Gas Backup and Fuel Limitations N. Toxic Air Contaminants O. Fuel Facilities P. Annual Report Q. Startup and Shutdown	Federal, District	Boiler

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NSR Permit # 2267 - Enclosed Equipment or air assisted water sprays for dust control - Opacity 20% - Fuel storage piles shall contain adequate moisture - Opacity 20% from loading and unloading of fuel	Federal, District	Wood Processing and Unloading System
NSR Permit # 2477A 1.Operation 100 hours per year for maintenance 2.Operation limited to emergencies 3.Recordkeeping-hours of operation and routine maintenance. 4.Opacity 20% 5.Installation of an hour meter 6.Reporting-monthly fuel consumption and hours of operation	Federal, District	Emergency Power Generator
40 CFR Part 82, Stratospheric Ozone Protection	Federal	Air Conditioning
Rule 900-Operating Permits	Federal, District	Facility Wide
Rule 517-Emergency Variance	State, District	Facility Wide

## **V. Statements of Basis**

The proposed Operating Permit includes conditions to ensure that all Federal requirements will be satisfied. Additionally, the permit has been designed to have adequate monitoring, record keeping and reporting requirements to demonstrate continuous compliance with the permit conditions.

The following provides additional clarification regarding certain permit changes and permit conditions.

### **1. Boiler Permitting History**

Original ATC permit # 1929 was issued to Western Power Group Unit II, Inc. for a power

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generating agricultural waste resource recovery plant on December 18, 1987. In May 16, 1988, the project was acquired by Imperial Resource Recovery Associates, L.P. and the ATC permit numbering changed to 1929A. The Authority to Construct permit was amended on January 20, 1993, to eliminate condition R which required the facility to burn 20,000 tons of field wastes per year. The permit numbering was changed to 1929B. In June 3, 1998, the Authority to Construct conditions were amended to change ownership to Imperial Valley Resource Recovery. The permit numbering was changed to 1929C.

2. 40 CFR Part 60, Subpart Db, Applicability.

40 CFR Part 60, Subpart Db, set limits for the operation of Industrial Steam Generating Units with a heat input of or greater than 100 MMBtu/hr which constructed, modified or reconstructed after 06/19/1984. The boiler was constructed in 1987 with a maximum fuel input of 291.9 MMBtu/hr. Therefore, the boiler is subject to the requirements of Subpart Db.

3. 40 CFR Part 60, Subpart Db-Standard of Performance for Industrial-Commercial-Institutional Steam Generating Units.

The facility has an annual capacity factor greater than 30 percent for wood. The boiler is subject to comply with an emission limit for particulate matter of 0.10 lb/MMBtu [40 CFR, Part 60.43b(c)(1)] and an opacity limit of 20 percent, 6-minute average [40 CFR, Part 60.43b(f)]. These limits apply at all times, except during periods of startup, shutdown or malfunction.

The particulate matter requirement of Subpart Db will be subsumed under the particulate matter emission limit of the Authority to Construct permit # 1929C, Condition F.1. The particulate matter limit from Section 60.43b(c)(1) would be 29.19 lbs/hr (291.9 MMBtu/hr \* 0.1 lb/MMBtu). The boiler has a maximum fuel input of 291.9 MMBtu/hr (22 tons/hr wood residues; 6,633 Btu/lb). The allowance of 29.19 lb/hr of particulate matter of subpart Db exceeds the 9 lb/hr allowed for the boiler under Authority to Construct Permit # 1929C. The streamlining of these conditions is an appropriate action, due to the fact that the facility has an emission limit from their Authority to Construct permit which is more stringent than the requirement of this Subpart. This requirement is currently federally enforceable, therefore, by streamlining these conditions we are not creating new federally enforceable requirements.

The 20 percent, 6-minute average, opacity limit of Subpart Db will be subsumed under the 10 percent, 3-minute average, opacity limit of Authority to Construct permit #1929C, Condition F.1. The facility operates an opacity continuous emission monitoring system as

required by 40 CFR, Part 60.49b(b). Opacity is monitored in 3-minute average. By monitoring opacity at closer intervals, compliance with the 6-minute average is assured. Additionally, the facility will comply with the opacity recordkeeping requirements of 40 CFR, Part 60.49b(f) which requires the facility to maintain records of 3-minute average opacity reading. The Authority to Construct opacity limit is currently federally enforceable, therefore, by streamlining these conditions we are not creating new federally enforceable requirements.

4. Compliance with SO<sub>2</sub>, NO<sub>x</sub>, and CO limits.

Compliance with the hourly emission limits for SO<sub>2</sub>, NO<sub>x</sub>, and CO is determined by operation of a continuous emission monitoring system. The system has the capability of monitoring and reporting the variables on ppm @12% CO<sub>2</sub>, lb/hr and lb/MMBtu. Additionally, an annual performance test is required to corroborate compliance with the emission limits.

5. Rule 131-Fuel Burning Equipment.

The boiler is subject to the requirements of SIP Rule 131. According to this Rule, the boiler is restricted to discharge into the atmosphere air contaminants in excess of 200 lb/hr of sulfur compounds, 140 lb/hr of nitrogen oxides and 10 lb/hr of solid or liquid particles. The requirements of SIP Rule 131 will be subsumed under the NSR permit requirements (Authority to Construct permit # 1929C). This is an appropriate action, due to the fact that the NSR permit requirements for sulfur compounds, nitrogen oxides and particulate matter are more stringent than the requirements of SIP Rule 131. All of these requirements are currently federally enforceable, therefore, by streamlining these conditions we are not creating new federally enforceable requirements.

6. Rule 405-Sulfur Compounds.

SIP Rule 405 restricts emissions of sulfur compounds into the atmosphere not to exceed 0.2 percent by volume (2000 ppmv). The sulfur compounds, calculated as sulfur dioxide, limit of SIP Rule 405 will be subsumed under the sulfur dioxide emission limit of Authority to Construct permit # 1929C, Condition F.1. The SO<sub>2</sub> limit from Rule 405 would be 1418 lbs/hr  $[2000\text{ppmv} \times 70,000\text{ft}^3/\text{min} \times 64.1\text{lb}/\text{lb-mol} \times 60\text{min}/\text{hr}] / (379\text{ft}^3/\text{air}/\text{lb-mol}) \times 10\text{E}6\text{ppmv}]$ . The allowance of 1418 lb/hr of sulfur dioxide or Rule 405 exceeds the 60 lb/hr allowed for the boiler under Authority to Construct Permit # 1929C. The streamlining of these conditions is an appropriate action, due to the fact that the facility has an emission limit from its Authority to Construct permit which is more stringent than the requirement of Rule 405. This requirement is currently federally enforceable, therefore, by streamlining these



conditions we are not creating new federally enforceable requirements.

7. CEMS Requirements Streamlining

The Authority to Construct permit #1929C, Condition I.1, requires to maintain and operate a continuous emission monitoring system for opacity, flow rate, temperature, CO, NO<sub>x</sub>, SO<sub>2</sub> and CO<sub>2</sub>. The SIP Rule 110, Stack Monitoring, requires to install a CEMS for NO<sub>x</sub>, SO<sub>2</sub> and CO<sub>2</sub>. In order to avoid repetition of the conditions in the Title V Operating Permit, these requirements will be subsumed under the NSR requirements. These requirements are currently federally enforceable. By streamlining these conditions we are not creating new federally enforceable requirements.

8. SIP Rule 110 and 40 CFR, Part 60.49(h) Streamlining

The SIP Rule 110, Stack Monitoring, requires to submit a quarterly CEM report. The report will include a monthly summary of the highest hourly % opacity and the hourly average % opacity for each hour of the day. The report will also include a negative declaration when no excess emissions occurred. 40 CFR, Part 60.49(h) requires to submit an opacity excess emission report for each any quarter during which there are excess emissions. In order to avoid repetition of the conditions in the Title V Operating Permit, these requirements will be subsumed under the SIP Rule 110 requirements. These requirements are currently federally enforceable. By streamlining these conditions we are not creating new federally enforceable requirements.

9. SIP Rule 111, Equipment Breakdown, and Authority to Construct 1929C, Conditions A and J Streamlining.

SIP Rule 111 requires the permittee to notify the ICAPCD within 2 hours of occurrence of any breakdowns which cause a violation of emission limitations prescribed by District Rules and Regulations, or by State law. The completion of corrective measures or the shut down of emitting equipment is required within 24 hours of occurrence of a breakdown condition.

The Authority to Construct 1929C, Conditions A and J, require the source to comply with the Breakdown Rule. In order to avoid repetition in the Title V Operating Permit, these requirements will be subsumed under the SIP Rule 111 requirements. These requirements are currently federally enforceable. By streamlining these conditions we are not creating new federally enforceable requirements.

10. Authority to Construct 1929C, Condition H.2 Partial Exemption.

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Authority to Construct permit 11929C, condition H.2, lists a series of source test methods including a method for determination of dioxin as determined by CARB (California Air Resources Board). However, an emission limit for dioxin is not included in the Authority to Construct 1929C. The facility has requested to leave this requirement out of the Operating Permit based on the unnecessary and outdated status of this requirement (DRAFT California White Paper for Title V Implementation, October 25, 1995).

11. Federal Enforceability of Permit to Operate # 1929C, Condition K.

Permit to Operate #1929C, Condition K, intends to control odors associates with the handling of fuels, impose limits, monitoring and reporting requirements for hydrogen sulfide emissions. This condition was carried into the permit from the original ATC permit #1929. However, this ATC condition does not come from any District, State of federal regulation. Therefore, this condition will be considered non-federally enforceable and will be labeled "District Only" enforceable in the Title V Operating Permit.

12. Exempted Emission Units

Several emission units are exempted from Title V Operating Permit requirements based on the current version of Rule 202, Exemptions (White Paper for Streamlined Development of Part 70 Permit Applications, USEPA, July 10, 1995). Rule 202 was revised by the District on September 7, 1993. The revised Rule has been submitted to EPA as a SIP revision. The emission units exempted and bases for exemption are listed in the Insignificant Activities section.

## **VI. Insignificant Activities**

The following types of activities and emission units will be exempted from the Title V permit requirements.

1. Front-end loaders (2), bob-cat, wheeled loader, backhoe, pickup trucks, diesel trucks (off highway), water truck, dump truck (off-highway). Motor vehicles as defined by the Vehicle Code of the State of California will be exempted based on Rule 202.E.2.a and the guidelines on Title V Operating Permit Program Submittal, Attachment "C", List of Trivial Activities.

## **VII. Supplemental Annual Fee**

The supplemental annual fee for the facilities will be determined according to the

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guidelines of Rule 900.G. The supplemental annual fee will be calculated according to the following equation:

$$s = [ \$ 32.65 \text{ per ton (CPI adjusted)} \times e ] - f$$

where:

s = supplemental annual fee in dollars

e = fee-based emissions in tons per year

Actual emission inventory for which fee-based emission schedule applies:

The facility has not been operated regularly during a complete year since 1995; therefore, an evaluation of the annual actual rate of emissions cannot be made. The Permit to Operate fees will be based on ICAPCD Regulation III.

f = sum (in dollars) of annual fees under Regulation III:

Equipment	Permit #	Fee Paid
Boiler	1929C	\$ 5,832.00
Wood Processing and Unloading System	2267A	\$ 1,296.00
Emergency Generator	2477	\$ 90.00
AB2588 Fee		\$ 107.00
TOTAL		\$ 7,325.00

Total Emissions of Fee Pollutants:	0 tons/yr
Emissions of Fee Pollutants x \$ 32.65/ton:	\$ 0.00
Annual Fees under Reg.III	\$ 7,325.00
Estimated supplemental Title V Program Fee:	( 0.00 - 7,325.00) = \$ 7,325.00

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These calculations indicate that the annual fee paid by the facility under Regulation III and AB2588 exceeds the emission fee pollutant schedule under Rule 900 therefore no supplemental fee is required.